

## **Building a Green Capital City-V2 Draft Report**

### **Category: Full Committee - Vision**

**Where it fits in with the *Blueprint*?** Overall goal: To make Madison a green capital city, a national leader in energy efficiency and renewable energy that also support the city's economic vitality (p.3) and Establish a Madison Sustainable City Program (p.50)

### **Further background as appropriate:**

- The City adopted The Natural Step (TNS), a framework to create a sustainable city. This sustainability framework and training is used throughout city government from top leadership on down. Many City employees have been trained in the TNS.
- The agencies have begun to look at the “triple bottom line,” being mindful of the environmental, financial, and social implications of all policies and operations. This work goes beyond energy to other areas, such as, climate change, water quality and efficiency, solid waste, land use, transportation, economic viability, affordable housing, education, etc.
- The City is beginning to use the TNS process to implement policies and programs (**A**wareness, **B**aseline, **C**ompelling Vision, **D**own to Action)
- The City is implementing a community process to help determine sustainability indicators – attached are two draft diagrams showing possible areas to consider.

### **Principal sub-areas**

#### **1) Structure of the Revised Building a Green Capital City**

##### **Vision**

Defining sustainability, starting with TNS then extrapolating it into the specific areas of concern, THEN defining/creating/adopting indicators for those concerns.

Taking those areas of concern and associated indicators, we then disseminate them into areas of focus. This packaging of ABCDs is done for digestibility for all users, and to give a more holistic view for each sector.

In recognition that true sustainability does not have borders regional collaboration will be including as a long-term goal for all areas of focus and categories listed below.

##### **Outreach/Regional Collaboration**

Involve a broad range of stakeholders and document outreach done during the development of the updated Building Green Capital City Blueprint. The plan should also

include how outreach will continue through the implementation of plan including the Madison community but also possibilities for regional collaboration. We will actively seeking input from the public to shape sustainability indicators early in the planning process. This will also give the City an opportunity to share the City's sustainability progress to date.

### **Areas of Focus**

#### **Public Sub-Committee**

While city operations will surely take the largest chunk, the city has many opportunities for influence that extend beyond a conservative definition of "operations" and could include other units of government, utilities, transportation, urban planning, etc. Infrastructure spans all sectors and should be examined separately. A useful lens for examining infrastructure is to recognize it as a means for solving logistical issues, and also that logistical problems are inherently inefficient. A person needs to get from point A to point B then a car+street infrastructure solves that. But if the trip can use a more efficient infrastructure, say by sidewalk infrastructure with urban density or Internet infrastructure with video conferencing, the entire system becomes more efficient.

#### **Private Sub-Committee**

This encompasses all areas that aren't public. Any organization that isn't directly controlled by publicly appointed individuals, excluding individual issues. This should be agnostic of an organization's tax status or organizational structure; if private citizens control it it's private. This subgroup will also deal with residences, individuals and lifestyle issues.

### **2) The update of the Building a Green Capital City Blueprint should consider including the following categories and to establish indicators to measure that progress.**

- a. Environmental Performance
  - i. Energy/Climate Change – Data about carbon baseline and energy consumption for the City and community need to be developed fully and identification of regulations, polices, programs that will lower energy use and decrease GHG emissions.
  - ii. Water Efficiency – The City of Madison and community work together on conservation efforts such as, pricing strategies, use of grey water, and other water efficiency strategies.
  - iii. Water Quality – The City of Madison and adjacent jurisdictions work together to ensure clean, safe drinking water and healthy, sustainable watersheds and aquifers.
  - iv. Air Quality - Available data about pollution levels within the city and immediately adjacent jurisdictions is published in understandable form and identification of regulations and programs that will lower pollution levels identified.

- v. Solid Waste Diversion - Reduce the amount and environmental toxicity of solid waste entering landfills from all sources in the City of Madison
- b. Community Health
  - i. Public Health – Data about the environment that impacts public health easily available to the public including at-risk populations and using the public health message to educate and inform stakeholders and policymakers.
  - ii. Transportation – The City of Madison and adjacent jurisdictions working together to significantly lower single occupancy vehicles using fossil fuels through planning for a broad spectrum of alternative transportation methods and technologies that do not heavily rely on fossil fuels.
  - iii. Land Use - The systematic examination of current land use in Dane County and identification of regulations and programs that will maximize the utility of land while minimizing associated waste.
  - iv. Local Food Supply – A recognition that food grown locally helps foster economic development and decreases emissions from transportation and water use in areas of the country where current water use is not sustainable.
  - v. Enriching Community Life – Working towards sustainability will enhance community life by making our environment cleaner, healthier, more prosperous, and literate,
- c. Economic Prosperity
  - i. Economic Viability - Insure that Greater Madison is positioned to capitalize on its resources, greatest among them the Wisconsin Idea, to continue the innovation and creativity that has made Madison an economic engine.
  - ii. Education – Development of partnerships with schools and higher levels of education to work on incorporating sustainability concepts into curriculums and to assist in engaging the community.
  - iii. Housing Affordability - Examine the current housing stock and encourage developers to provide for underserved markets through regulation and incentive.
  - iv. Green Business Development - Recognize businesses that advance the Blueprint and encourage their growth and formation.

Note: It is recognized that the Sustainable Design and Energy committee will not work to implement all areas listed above, but the SDE feels that it is important to recognize all the areas that make up a truly sustainable community. It is the hope of the committee that through an update of Building a Green Capital City that several agencies in the City and community partners will better understand their roles in helping to achieve sustainability.

Note: The SDE committee should consider STAR Communities Index at [www.icleiusa.org/star](http://www.icleiusa.org/star) or Conservation Economy through EcoTrust at [www.conservationaleconomy.net](http://www.conservationaleconomy.net) as possible models of sustainability categories.

**3) Backcast or work from the ultimate goal, such as “zero net energy” and “carbon neutral” for energy efficiency and renewable energy and recommend steps from the present to that future, such as 2050 when Madison would become a state, country and world leader in green living.**

In order to reach that 2050 objective, the city may adopt compelling visions, such as, but not limited to:

**a. Zero Net Energy**

Zero Net Energy buildings or communities are those that, on an annual basis, produce as much energy from renewable sources as they consume. Zero Net Energy is advanced by maximizing energy efficiency while using clean, renewable energy, such as, wind turbines, photovoltaics, geo-thermal, biofuels, or other renewable energy systems or a mix of systems to meet the remaining load.

**b. Carbon Neutral**

Carbon Neutral refers to achieving net zero carbon emissions by balancing the measured amount of carbon emissions released from everyday life activities with an equivalent amount sequestered or offset so that there is no carbon footprint. Typically measured in units of CO<sub>2</sub>, the carbon neutral concept may be extended to include other greenhouse gases (GHG) measured in terms of their carbon dioxide equivalence -- the impact a GHG has on the atmosphere expressed in the equivalent amount of CO<sub>2</sub>. Communities seeking to become carbon-neutral often seek to

- Limit energy usage and emissions from transportation, buildings, equipment and processes to the greatest extent possible
- Obtain energy from renewable sources directly by generating it or by selecting an approved green energy provider, and by using low-carbon alternative fuels such as biofuels
- Offset remaining emissions that cannot currently be avoided or generated from renewables by buying carbon credits.

**c. Zero Waste**

Zero Waste is an idea all waste streams from a system in such a way that becomes inputs for another system and reduces the outputs (waste) to zero. Zero waste extends current approaches to recycling by introducing the concept of *circular* systems in which as much waste as possible is reused, similar to the way that resources are reused in nature.

**d. 100% City electrical usage from renewable sources by 2025**

Through backcasting, this compelling vision is created. In addition, a plan to achieve measurable progress over time is also created.

### ***Zero Net Energy – An Example***

*Using TNS to create a compelling vision for what Madison would look like when it becomes a sustainable city. SDE Committee already developed a goal of zero net energy by 2050.*

#### **ZERO NET ENERGY- AN EXAMPLE**

- A. Understanding Zero Net Energy
- B. Make the Case
  - a. Researching what other locations have done
  - b. Researching new findings
  - c. Developing educational materials
  - d. Establishing educational partners
- C. Action Steps
  - a. Reducing energy consumption
    - i. New construction
    - ii. Existing buildings
    - iii. New transportation
    - iv. Current transportation
  - b. Expanding local or on-site use of clean, renewable energy
    - i. Wind
    - ii. Solar
    - iii. Other
  - c. Expanding availability of clean, renewable energy
    - i. Wind
    - ii. Solar
    - iii. Hydro
    - iv. Other
- D. Strategies to Implement Action Steps
  - a. City operations
  - b. City policies and regulations
  - c. Businesses
    - i. Education
    - ii. Incentives
  - d. Public
    - i. Education
    - ii. Incentives

#### **Examples of possible goals:**

- Reduce energy consumption in sector/ category X by YY% by 2020
- Increase production of renewable energy systems by X by 2020
- Increase the use of renewable energy by X% by 2020